

IN THE UNITED STATES DISTRICT COURT FOR
THE EASTERN DISTRICT OF VIRGINIA
Richmond Division

GOLDEN BETHUNE-HILL, *et al.*,

Plaintiffs,

v.

VIRGINIA STATE BOARD OF ELECTIONS, *et al.*,

Defendants.

Civil Action No. 3:14cv852

FOURTH ADDENDUM TO THE REPORT OF THE SPECIAL MASTER

January 8, 2019

Bernard Grofman*
Special Master

*Bernard Grofman is Distinguished Professor of Political Science and Jack W. Peltason Endowed Chair of Democracy Studies at the University of California, Irvine, and former Director of the UCI Center for the Study of Democracy.

Below I respond to the Court's Order of January 7, 2019. At the end of this addendum I also take the opportunity to flag minor errors in black voting age percentages reported for two districts in my Norfolk area illustrative module in my January 4, 2019 Addendum, and to provide the corrected figures.

1. As correctly noted in the Court's Order of January 7, the data reported for African-American voting age percentages I report for the 2011 Enacted map differ slightly from what is reported by the State. The cause of the differences between the two sets of numbers is straightforward. In my December 7, 2018 Report, for the 2011 Enacted map, I showed the voting age population data from the U.S. Census for African-American voting age population; the State has been following the Census Bureau recommendation in reporting the data the combines those with single race identification as African-American and those who identify on the Census as both black and white. The black voting age population percentages for the 2011 Enacted map in my December 7, 2018 Report were repeated in subsequent addendums if reference was made to the 2011 Enacted map in that addendum.

2. I show below the comparisons in the 2011 Enacted plan for the two ways to define black voting age population (BVAP). The second set of numbers for the 2011 Enacted map reported below are the same those reported to the Court by the State of Virginia, and used in Court documents. As is apparent, the differences are small. But, with a reduced definition of who is black, i.e., excluding individuals who identified as both black and white, three districts in the 2011 Enacted map that were shown in my Report of December 7 as having a black voting age population slightly below 55% would instead be shown as slightly above 55% (districts 69 and 71 and 89).

District	[% BVAP]	[% WBVAP]	Difference
63	59.09%	59.53%	0.43%
69	54.78%	55.19%	0.40%
70	55.99%	56.37%	0.38%
71	54.87%	55.35%	0.48%
74	56.91%	57.24%	0.32%
77	58.44%	58.78%	0.34%
80	55.94%	56.30%	0.36%
89	54.98%	55.46%	0.48%
90	56.10%	56.59%	0.49%
92	60.14%	60.72%	0.58%
95	59.35%	59.97%	0.62%

Note: BVAP is simply the sum of 18+ black, divided by all 18+. WBVAP is the sum of those 18+ who identify as black as well as those who state a multiracial identity of black and white, divided by all 18+.

3. However, while I did inadvertently use a racial coding scheme in my Report of December 7 for the 2011 Enacted map that was not the same as the racial coding scheme used by the legislature, for ALL other black voting age numbers in my December 7, 2018 Report, to the best of my knowledge, I used the State of Virginia's definition of who was to be counted as black. Thus, the State of Virginia's definition of who was to be counted as black was used for my analyses of each of the five submitted plans, as well as for the data provided for my illustrative modules. The racial data reported for the 2011 Enacted map in my December 7, 2018 Report was generated on my own computer using *Maptitude*, and this was done prior to the November 2 submission of remedial maps. After that point, I used the racial data provided by legislative staff for my analyses.

4. I apologize to the Court and the parties for not noticing that the data Reports on the 2011 Enacted plan used a different racial coding scheme than for the other tables and analyses I did. I am indebted to Defendant-Intervenors for calling this to the Court's attention, and to my attention.

5. The discrepancies between the racial data I reported for 2011 Enacted Map in my December 7, 2018 Report and that used by the parties and the Court were irrelevant to any of the conclusions in my December 7, 2018 Report about the degree to which different proposed remedial maps and my illustrative maps do or do not satisfactorily address the constitutional infirmities called attention to by the Court. These evaluations of remedial maps were based on the same racial coding used by the legislature.

I can illustrate this point by considering DI7002. Using the legislative definition of black voting age population, DI7002 has seven districts above 55%, with one of these at 60%. In contrast, using that same definition, the largest black voting age population in any of the districts in any of my modules is 55.01%, and that black population level is found in one district, in only one of my three modules in the Richmond area. DI7002 has districts which actually increase minority population from what they were in the 2011 Enacted map -- a feature that I do see as an appropriate response to the unconstitutionality in the eleven districts found unconstitutional. In contrast, none of my illustrative modules have this feature.¹

¹ Of course, as discussed in detail in the Appendix to my December 7, 2018 Report, these racial aspects of the DI7002 plan were not the only reasons I could not recommend it to the Court as an appropriately narrowly tailored remedy for the unconstitutional infirmities in the eleven districts found to be unconstitutional. DI7002 changes 30 districts, a number which I regard as not appropriate for a narrowly tailored remedy map. In contrast, the largest number of districts changed in any map built from my illustrative modules is 26 and it is possible to construct a plan that changes only 21 districts from the 2011 Enacted map. DI7002 perpetuates the "fracking" in the unconstitutional map which, to me, signals sloppy mapmaking which is not needed to avoid pairing of incumbents, nor appropriate for a narrowly tailored remedy. In contrast, none of my illustrative modules contain "fracked" districts. Controlling for number of districts changed, DI7002 has more total splits in jurisdictional units such as counties and cities than is shown in the 26 or 21 district illustrative maps that combine various of my illustrative modules. The county/city splits in DI7002 were not needed for a narrowly tailored remedial plan. I might also note that, as documented in an earlier Addendum, my 26-district illustrative map has even fewer VTD splits than DI7002.

6. Within the community of redistricting specialists, there is some disagreement about how best to use racial data for districting purposes. For example, the Virginia Branches of the NAACP apparently calculated racial percentages via a method of calculation that is different from that used by the legislature. That method take into account whether an individual who self-identifies as black also self-identifies as Hispanic – Hispanic is not a racial category on the Census.² The NAACP (Doc 286 pg.6, see also Appendix A) appears to define black voting age population as $18+\text{NH_Black_VAP}/18+\text{VAP}$, where NH is shorthand for non-Hispanic.³

7. My use of a racial coding scheme for the 2011 Enacted map that was different from that of the legislature was inadvertent, based on data generated before I accessed legislative data. I understand the need for consistency, especially with data reported in Court opinions. As noted above, in all other tables and analyses, to the best of my knowledge, I have used the black voting age percentages provided to me by legislative staff.⁴ In any needed future reports or addendums, unless otherwise instructed by the Court, I will continue to use the legislative definition of black voting age population.

CORRECTIONS TO JANUARY 4, 2019 ADDENDUM

8. In my Third Addendum of January 4, 2019 I discuss a problem with the specification of district boundaries in districts 89 and 90 in Norfolk illustrative modules 1A, 1B and 1C that led to minor population discrepancies that needed to be corrected. These were corrected in a subsequent version of these illustrative modules released on the first business day after December 7. In that January 4 Addendum, total population figures were reported for the slightly revised modules that had been changed to achieve population balance. The racial voting age percentages stated in that Report for Norfolk area districts are based on the legislative definition, and therefore should have required no changes. However, I have found a minor problem with the black voting age population reported in that plan for two of the 12 districts considered in that 3rd Addendum: district 79 and district 89. That problem is found in all three Norfolk area illustrative modules. The problem can be traced to a glitch in *Maptitude* in properly locating Norfolk area population within the Naval base census blocks. This flaw in

² I am not sure which racial coding scheme is used by Plaintiffs but I would expect it to be the one used by the legislature.

³ While the Hispanic/non-Hispanic coding is straightforward, I am not clear from the data given in that document exactly which census respondents are being coded as black. (Census data includes disaggregation of those who select multiple races, so there are individuals who identify as just one race, some who identify with two races, and some that identify with more than two races,)

⁴ In the two Norfolk area districts in my illustrative modules discussed above, apparent discrepancies with the legislative measure of black voting age population in two districts came about due to my failure to enter the corrected black voting age percentages in the tables in my January 4, 2019 Addendum. The corrected values are shown above but, as previously noted, the differences with those reported are minor.

Maptitude was known to legislative staff but was not a problem for them since they were working in *ArcGis* rather than *Maptitude*. Unfortunately, when I corrected the total population figures for district 89 and 90 in the data shown for the Norfolk illustrative modules in my Addendum of January 4th, 2019, I failed to correct the BVAP values, the Fairfax election results, and the Obama election percentages for those two Norfolk districts. I apologize to the Court and to the parties for this error.

The table below shows the reported black voting age percentages in my Addendum of January 4, 2019, and the corrected percentages. As is apparent from the tables, the differences between reported and corrected values are minor.

Norfolk 1A				Norfolk 1B			
District	Reported	Correct	Diff	District	Reported	Correct	Diff
79	31.46%	31.68%	0.22%	79	31.98%	32.21%	0.23%
89	54.92%	54.95%	0.03%	89	54.92%	54.95%	0.03%

Norfolk 1C			
District	Reported	Correct	Diff
79	32.00%	32.23%	0.23%
89	54.98%	55.01%	0.03%

9. It is only in Norfolk 1C and only in district 89 that the black voting population discrepancy is below 55% if we use the mono-racial measurement of black voting age population, and above 55% if we use the multiracial definition of black voting age population. But, as is apparent from the table above, the actual difference between the two percentages is trivial. Moreover, this issue does not arise in district 89 in the other two Norfolk modules. And, of course, it does not arise in any other illustrative modules, since I am using the legislative definition of black voting age population for those modules.

10. The changes needed to correctly specific the percentages for the Obama vote and for the Fairfax vote in district 89 in all three illustrative modules are just as minor as those shown above for black voting age population. They do not affect the view expressed in my December 7, 2018 Report that these illustrative modules, when further perfected (e.g., making some further reductions in VTD splits) can be used as part of a plan that cures constitutional infirmities.